

NEW RECORDS OF *RHINONCUS BRUCHOIDES* (HERBST) FOR THE
WESTERN HEMISPHERE AND A REVISED KEY TO THE NORTH
AMERICAN SPECIES OF THE GENUS *RHINONCUS*
(COLEOPTERA: CURCULIONIDAE:
CEUTORHYNCHINAE)

E. RICHARD HOEBEKE AND DONALD R. WHITEHEAD

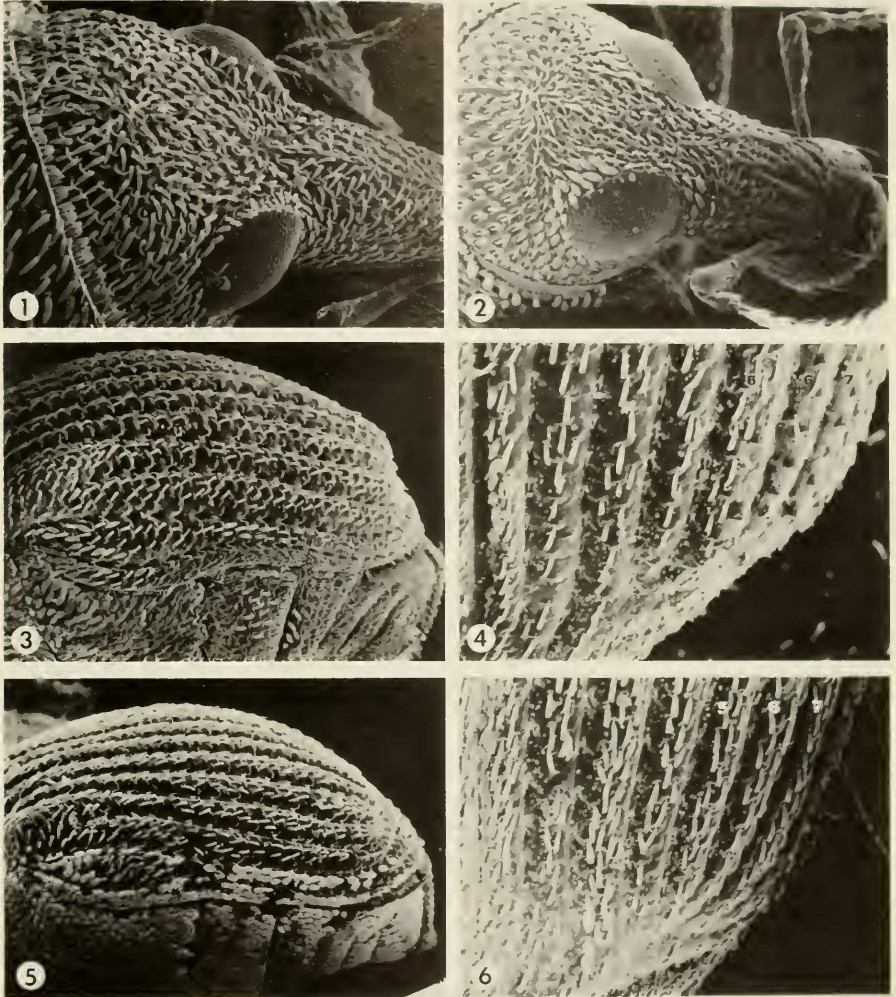
(ERH) Department of Entomology, Cornell University, Ithaca, New York 14853; (DRW) Systematic Entomology Laboratory, IIBIII, Agric. Res., Sci. and Educ. Admin., USDA, % U.S. National Museum of Natural History, Washington, D.C. 20560.

Abstract.—Specimens of the European *Rhinoncus bruchoides* (Herbst) collected in 1979 in Delaware and Maryland represent the first records of this species for eastern North America and perhaps for the Western Hemisphere. This is the third European member of the genus to become established in North America. A new key to the six North American species, supplemented by scanning electron photomicrographs, is given, as are distribution records for the other introduced species, *R. pericarpus* (Linnaeus) and *R. castor* (Fabricius).

The last comprehensive study of the North American Ceutorhynchinae was by Dietz (1896), and nearly all the included genera require thorough restudy. The genus *Rhinoncus* Stephens was briefly treated by Brown (1950), but we suspect that additional native species remain to be discovered, particularly in the western states. Here, we report the discovery of the third European species to become established in North America. This discovery is a result of the USDA-APHIS "High Hazard Pest Survey" program.

One of us (ERH) received for identification a Delaware specimen which was found to match a specimen of *Rhinoncus bruchoides* in the Cornell University Insect Collection (CUIC). This specimen was sent for confirmation to DRW who compared it against a recently determined specimen of *R. bruchoides*. Examination of the U.S. National Museum (USNM) collection revealed three Maryland specimens that represent another North American record of this species.

The North American species of *Rhinoncus* feed primarily on the foliage



Figs. 1, 3-4. *Rhinoncus triangularis*. Fig. 2. *R. longulus*. Figs. 5-6. *R. pericarpus*. 1, Head, dorsal view, 102 \times . 2, Head, dorsal view, 95 \times . 3, 5, Elytra, lateral view, 55 \times . 4, 6, Elytral apex, dorsal view, 104 \times (intervals 5-7 numbered).

of various Polygonaceae. The native species feed on *Polygonum* (smartweed). Host plant associations for the introduced species and the known distribution records of each in North America based on the literature and specimen records in the CUIIC and USNM are discussed below.

R. bruchoides (Herbst).—The first substantiated records of this species for eastern North America include the following two localities: DELA-

WARE: New Castle Co., Bear, 1979 and MARYLAND: Montgomery Co., Potomac, 1979. We believe that its occurrence in the Northeast is relatively recent. However, *R. bruchoides* seems to be carried readily by commerce; during the period July 1, 1947 to June 30, 1948, there were two reported port interceptions in New Jersey (Wheeler et al., 1950). Dieckmann's (1972) discussion of *R. bruchoides* included mention of a male in the USNM collection from "Kansas, Topeka, Popenoe"; we have not found this specimen. It is indeed possible that Dieckmann's record represents an introduction via commerce along the Mississippi and Missouri Rivers. The record requires confirmation by study of other older collections; the Popenoe materials date from around the turn of the century, or earlier, and all the specimens in the long USNM series with these data are clearly *R. pyrrhopus* Boheman. Reported host plants of *R. bruchoides* are species of *Polygonum*: *P. lapathifolium* L., *P. persicaria* L., and *P. hydropiper* L. (Dieckmann, 1972) and species of *Oenanthe* and *Chaerophyllum* (Apiaceae) (Reitter, 1916).

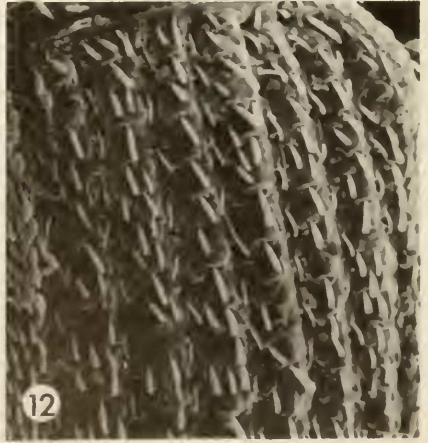
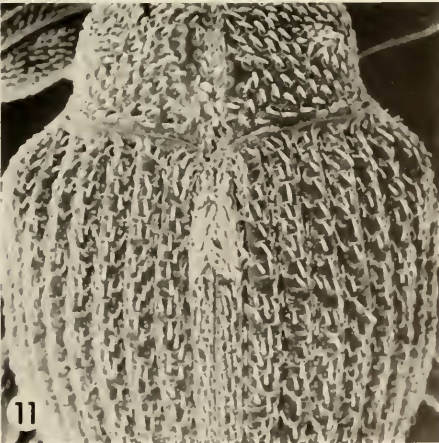
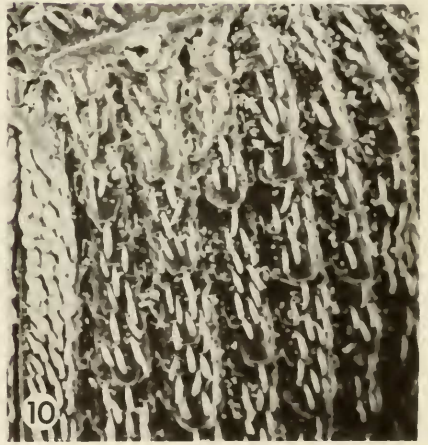
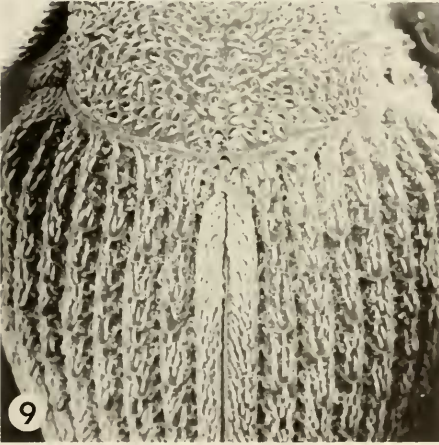
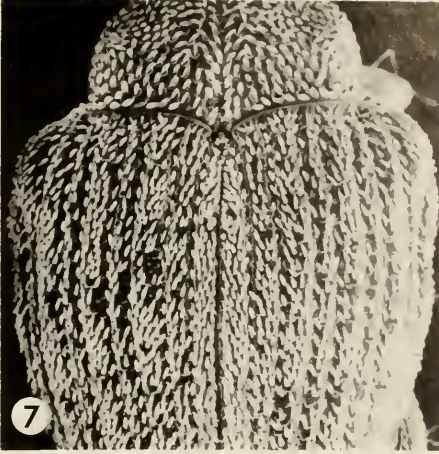
R. castor (Fabricius).—This species has been known from the Pacific Northwest at least since 1913 (Hatch, 1971) and from the Northeast at least since 1895 (Brown, 1950). Eastern locality records include the United States (Conn., D.C., Del., Ga., Ill., Mass., Md., Maine, Mich., Mo., N.H., N.J., N.Y., Ohio, Pa., R.I., Tenn., Va., Wis., W.Va.) and Canada (N.S., Ont., Que.). *Rhinoncus castor* has been taken from *Rumex acetosella* L. (Dieckmann, 1972), from alfalfa in Massachusetts (Fischang and Eversole, 1961) and Canyon County, Idaho (Bechtolt, 1960), and from *Oenanthe* spp. (Reitter, 1916).

R. pericarpus (Linnaeus).—This species has been known from the Pacific Northwest at least since 1935 (Hatch, 1971). Our earliest records from the Northeast include a USNM specimen from Watertown, Mass., 1928 and a CUIIC specimen from Geneva, N.Y., 1929. Eastern records include the United States (Conn., Mass., N.J., N.Y., Pa., R.I.) and Canada (Newfoundland, Ont., Que.). Known host plants of *R. pericarpus* are *Rumex* spp. (dock): *R. acetosa* L., *R. maritimus* L., *R. conglomeratus* Murr., *R. hydrolapathum* Huds., *R. obtusifolius* L., and *R. crispus* L. (Dieckmann, 1972). A USNM specimen was found with the label "feeding on rhubarb [*Rheum*] foliage" (Whatcom Co., Wash.). Several CUIIC specimens have been collected from alfalfa (Tompkins Co., N.Y.).

The Delaware and Maryland specimens of *R. bruchoides* key readily to that species in the European literature (Reitter, 1916; Portevin, 1935; Hoff-

→

Figs. 7–8. *Rhinoncus bruchoides*. Figs. 9–10. *R. castor*. Figs. 11–12. *R. pyrrhopus*. 7, Dorsal habitus, 46×. 8, Right elytron, basal portion, 106× (intervals 1–7 numbered at top). 9, 11, Dorsal habitus, 52×. 10, 12, Right elytron, basal portion, 102×.



mann, 1954; and Dieckmann, 1972), but to *R. pyrrhopus* in Brown's (1950) key to North American species. The following key is modified mainly from Brown (1950) to include *R. bruchoides* and to emphasize those characters that are easiest to use.

KEY TO NORTH AMERICAN SPECIES OF *RHINONCUS*

1. Dorsal (inner) orbital margins acutely elevated above level of frontal area (Fig. 1); eyes separated by distance as great as or greater than diameter of an eye 2
- Dorsal orbital margins not elevated above level of frontal area (Fig. 2); eyes separated by distance less than diameter of an eye *R. longulus* LeConte
2. Elytra without acute tubercles or asperities, or with small asperities only toward apices of intervals 5–8 3
- Elytra with acute tubercles or asperities on entire surface of disc 4
3. Elytral interval 5 strongly raised at apex as seen in lateral view (Fig. 3); intervals 5–7 or 5–8 with small, acute asperities toward apex (Fig. 4) *R. triangularis* (Say)
- Elytral interval 5 not or feebly raised at apex in lateral view (Fig. 5); intervals 5–8 without evident asperities toward apex (Fig. 6) ... *R. pericarpus* (Linnaeus)
4. Odd-numbered elytral intervals broadened, slightly raised and with series of larger asperities; even-numbered intervals much narrower, less raised, and with asperities conspicuously fewer and smaller (Figs. 7, 8); postscutellar scale patch grayish brown and inconspicuous *R. bruchoides* (Herbst)
- Odd-numbered intervals not broadened and raised, or at least with asperities not more conspicuous or numerous than on even-numbered intervals; postscutellar scale patch (in clean specimens) white or yellowish, bright and conspicuous 5
5. Elytral intervals with large, widely spaced, blunt tubercles (Figs. 9, 10); in most specimens elytra and pronotum entirely black above; pronotal sulcus feebly developed near base *R. castor* (Fabricius)
- Elytral intervals with small, closely spaced asperities (Figs. 11, 12); in most specimens elytra and apical margin of pronotum partly reddish and paler than the black pronotal disc; pronotal sulcus quite prominent, especially near base *R. pyrrhopus* Boheman

ACKNOWLEDGMENTS

We thank P. J. Spangler (Smithsonian Institution) and E. W. Baker and R. W. Hodges (Systematic Entomology Laboratory, USDA) for helpful criticism of the manuscript.

LITERATURE CITED

- Bechtolt, 1960. *In* Coop. Econ. Insect Rep. 10(19): 367.
- Brown, W. J. 1950. The extralimital distribution of some species of Coleoptera. *Can. Entomol.* 82: 197-205.
- Dieckmann, L. 1972. Beiträge zur Insektenfauna der DDR: Coleoptera—Curculionidae: Ceutorhynchinae. *Beitr. Entomol.* 22: 1-128.
- Dietz, W. G. 1896. Revision of the genera and species of Ceutorhynchini inhabiting North America. *Trans. Am. Entomol. Soc.* 23: 387-480.
- Fischang and Eversole. 1961. *In* Coop. Econ. Insect Rep. 11(24): 499.
- Hatch, M.H. 1971. The beetles of the Pacific Northwest. Part V: Rhipiceroidea, Sternoxi, Phytophaga, Rhynchophora and Lamellicornia. *Univ. Wash. Publ. Biol.* 16: i-xvi, 1-662.
- Hoffmann, A. 1954. Coléoptères Curculionides (Deuxième Partie). *Faune Fr.* 59: 487-1208.
- Portevin, G. 1935. Histoire naturelle des coléoptères de France. Tome IV, Polyphaga: Rhynchophora. Paul Lechevalier, Ed. Paris. 500 pp.
- Reitter, E. 1916. *Fauna Germanica. Die Käfer des Deutschen Reiches. Band V.* K. G. Lutz' Verlag, Stuttgart. 343 pp.
- Wheeler, W. H., J. Hunt, and E. P. Reagan (compilers). 1950. List of Intercepted Plant Pests, 1948. U.S. Dep. Agric., Bur. Entomol. Plant Quarantine, Serv. and Regulatory Announcements. 58 pp.